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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/693,850

10/23/2003

Steven M. Arnold

LEW 17,494-1

3672

26311 7590 11/30/2007

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EXAMINER

RODRIGUEZ, WILLIAM H

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

11/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/693,850

Applicant(s)

ARNOLD ET AL.

Examiner

/William H. Rodriguez/

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,5-17,29,31-74,90 and 93 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,5-17,29 and 31-33 is/are allowed.
- 6) ☒ Claim(s) 34-39,46 and 52-62 is/are rejected.
- 7) ☒ Claim(s) 40-45,47-51,63-74,90 and 93 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☒ Other: attachment A (5 pages).

### DETAILED ACTION

This office action is in response to the amendment and remarks filed 10/16/2007. Since the examiner has applied new grounds of rejection, this office action is being made non-final to afford the applicant the opportunity to respond to the new grounds of rejection.

#### *Response to Arguments*

1. Applicant's arguments with respect to independent claims 34, 52, 74, 90 and 93 have been considered but are moot in view of the new ground(s) of rejection.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 34, 52, 74, 90 and 93 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The term "*infinite or infinitely*" in claims 34, 52, 74, 90 and 93 is a relative term which renders the claim indefinite. The term "*infinite or infinitely*" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

\*According to the Merriam Webster's Collegiate Dictionary, the definition of "infinite" is:

1: extending indefinitely

2: immeasurably or inconceivably great or extensive

3: subject to no limitation or external determination

4 a: extending beyond, lying beyond, or being greater than any preassigned finite value however large

The recitations “a nozzle infinitely positionable between a first position and a second position; an infinite number of frustum-shaped conic subsections between an area of minimum cross section to an area of maximum cross section” in claims 34, 52, 74, 90 and 93 is improper and indefinite because the number of nozzle positions between a minimum area nozzle (first position) and a maximum area nozzle (second position) are not immeasurable or subject to no limitation or extend beyond the greater maximum area. For these reasons, examiner request removing the words “infinite and infinitely” from the claims. Appropriate correction is required.

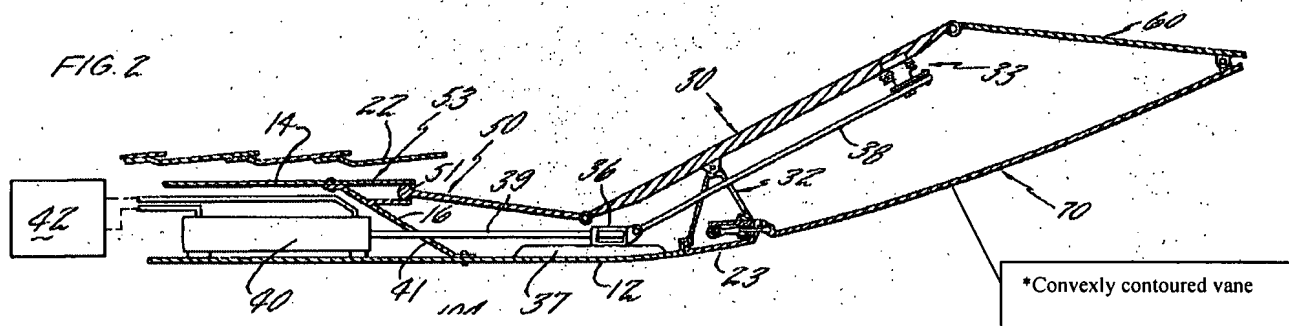
***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 34-39, 46, 52, 53 and 59-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Harmon (US 3,767,120).



7. Harmon teaches (particularly figures 1, 2 and 6) a gas turbine engine comprising a nacelle, a core engine and a variable area exhaust nozzle, said nozzle comprising a plurality of convexly\* contoured vanes 70 circumferentially and rotatably mounted to a concentric support 23, said plurality of vanes being positionable between a first position corresponding to a minimum area nozzle and a second position corresponding to a maximum area nozzle, an hydraulic actuator mechanism for opening and closing said vanes from said first position to said second position, and a seal (cl. 4 ll. 21) which engages an adjacent vane.

The plurality of positions are all the positions the plurality of vanes travel when said vanes move from the minimum area nozzle to the maximum area nozzle.

\*According to the Merriam Webster's Collegiate Dictionary, the definition of "convex" is curved or round like the exterior of a sphere or circle.

\*According to the Merriam Webster's Collegiate Dictionary, the definition of "contour" is an outline esp. of a curving or irregular figure.

Based on the above dictionary definitions, Harmon teaches that the plurality of vanes have a curved outline surface which satisfies the recitation "convexly contoured vane"

8. Claims 34-39, 46, 52, 53 and 59-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Ryan (US 4,128,208).

9. Ryan teaches (particularly figures 1 and 2) a gas turbine engine comprising a nacelle, a core engine and a variable area exhaust nozzle, said nozzle comprising a plurality of convexly\* contoured vanes 14 circumferentially and rotatably mounted to a concentric support, said plurality of vanes being positionable between a first position corresponding to a minimum area nozzle and a second position corresponding to a maximum area nozzle, an hydraulic actuator

mechanism for opening and closing said vanes from said first position to said second position, and a seal 17 which engages an adjacent vane.

The plurality of positions are all the positions the plurality of vanes travel when said vanes move from the minimum area nozzle to the maximum area nozzle.

\*According to the Merriam Webster's Collegiate Dictionary, the definition of "convex" is curved or round like the exterior of a sphere or circle.

\*According to the Merriam Webster's Collegiate Dictionary, the definition of "contour" is an outline esp. of a curving or irregular figure.

Based on the above dictionary definitions, Harmon teaches that the plurality of vanes have a curved outline surface which satisfies the recitation "convexly contoured vane"

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 54-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryan (US 4,128,208).

Ryan disclosed in detail above is silent about the seals being: a metal seal, a labyrinth seal, a brush seal, a hydrostatic seal, or an elastomeric seal. However, these types of seals are well known to one of ordinary skill in the art and commonly used in gas turbine engine exhaust nozzles that selecting a type of seal for Ryan engine exhaust nozzle would have been a simple design consideration/selection based on the technical requirements of the engine. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention

was made to have selected any of those seals (metal, labyrinth, brush, hydrostatic, elastomeric) because such a selection would have been considered a mere design consideration which fails to patentably distinguish over Ryan.

***Allowable Subject Matter***

12. Claims 1, 5-17, 29 and 31-33 are allowed in view of applicant's amendments to the claims (see amendment filed on 10/16/2007).

13. Claims 74, 90 and 93 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

14. Claims 40-45, 47-51, 63-73 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Rodríguez whose telephone number is 571-272-4831. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William H. Rodríguez/  
Primary Examiner  
Art Unit 3746



Attachment A (5 pages)



# Merriam-Webster's Collegiate® Dictionary

TENTH EDITION

Merriam-Webster, Incorporated  
Springfield, Massachusetts, U.S.A.



**A GENUINE MERRIAM-WEBSTER**

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1. English language—Dictionaries. I. Merriam-Webster, Inc.

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CIP

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Abbreviation

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16RMdN96



spare) in bowling ~ vi 1: to undergo conversion 2: to make good on a try for point, field goal, or free throw *syn* see TRANSFORM

**con-vert** \kən-vərt/ n (1561): one that is converted

**con-vert-er** \kən-vər-tər/ n (1533): one that converts: as a: the furnace used in the Bessemer process b or **con-ver-tor** \-vər-tər/: a device employing mechanical rotation for changing electrical energy from one form to another (as from direct current to alternating current or vice versa); also: a radio device for converting one frequency to another c: a device for adapting a television or radio receiver to receive channels or frequencies for which it was not orig. designed (a cable ~) (FM ~) d: a device that accepts data in one form and converts it to another (analog-digital ~) e: CATALYTIC CONVERTER

**con-vert-ible** \kən-vər-tə-bəl/ adj (14c) 1: capable of being converted 2: having a top that may be lowered or removed (~ coupe) 3: capable of being exchanged for a specified equivalent (as another currency or security) (a bond ~ to 12 shares of common stock)

**con-vert-ibil-ity** \kən-vər-tə-bəl-tē/ n — **con-vert-ible-ness** \-vər-tə-bəl-nəs/ n — **con-vert-ibly** \-bəl/ adv

**convertible** n (1615): something convertible; esp: a convertible automobile

**con-verti-plane** also **con-ver-ta-plane** \kən-vər-tə-plān/ n (1949): an aircraft that takes off and lands like a helicopter and is convertible to a fixed-wing configuration for forward flight

**conv-ey** \kən-vey/ n, \kən-vey/ adj [MF or L; MF *convex*, fr. L *convexus* vaulted, concave, convex, fr. *com-* + *vexus*; perh. akin to L *vehere* to carry — more at WAY] (1571) 1 a: curved or rounded like part of a continuous function with the property that a line joining any two points on its graph lies on or above the graph 2 a of a set of points: containing all points in a line joining any two constituent points b of a geometric figure: comprising a convex set when combined with its interior (a ~ polygon)

**conv-ey-ity** \kən-vek-sə-tē, kən-vey/ n, pl -ties (1599) 1: the quality or state of being convex 2: a convex surface or part

**conv-ey-o** also **conv-ey-er** \kən-vek-, \kən-vey/ n, \kən-vek-, \kən-vey/ adj (1693) 1: CONCAVO-CONVEX 2: having the convex side of greater curvature than the concave

**conv-ey** \kən-vey/ vi **con-veyed**; **con-vey-ing** [ME, fr. MF *conveier* to accompany, escort, fr. (assumed) VL *conviare*, fr. L *com-* + *via* way — more at WAY] (14c) 1 obs: LEAD, CONDUCT 2 a: to bear from one place to another; esp: to move in a continuous stream or mass b: to impart or communicate by statement, suggestion, gesture, or appearance c (1) *archaic*: STEAL (2) obs: to carry away secretly d: to transfer or deliver to another esp. by a sealed writing e: to cause to pass from one place or person to another

**con-vey-ance** \kən-vā-on(t)s/ n (15c) 1: the action of conveying 2: a means or way of conveying; as a: an instrument by which title to property is conveyed b: a means of transport: VEHICLE

**con-vey-anc-er** \-n(t)-sər/ n (1650): one whose business is conveying

**con-vey-anc-ing** \-n(t)-sɪŋ/ n (1714): the act or business of drawing deeds, leases, or other writings for transferring the title to property

**con-vey-or** also **con-vey-er** \kən-vā-ər/ n (ca. 1514): one that conveys: as a: a person who transfers property b *usu* **conveyor**: a mechanical apparatus for moving articles or bulk material from place to place (as by an endless moving belt or a chain of receptacles)

**con-vey-or-ize** *Brit* var of CONVEYORIZE

**con-vey-or-ize** \-vā-ə-rīz/ vi -ized; -iz-ing (1941): to equip with a conveyor — **con-vey-or-iza-tion** \-vā-ə-rī-zā-shən/ n

**con-vict** \kən-vikt/ adj (14c) *archaic*: having been convicted

**con-vict** \kən-vikt/ vi [ME, fr. L *convictus*, pp. of *convincere* to refute, convict] (14c) 1: to find or prove to be guilty 2: to convince of error or sinfulness

**con-vict** \kən-vikt/ n (15c) 1: a person convicted of and under sentence for a crime 2: a person serving a *usu* long prison sentence

**con-vic-tion** \kən-vik-shən/ n (15c) 1: the act or process of convicting of a crime esp. in a court of law 2 a: the act of convincing a person of error or of compelling the admission of a truth b: the state of being convinced of error or compelled to admit the truth 3 a: a strong persuasion or belief b: the state of being convinced *syn* see CERTAINTY, OPINION

**con-vince** \kən-vin(t)s/ vi **con-vinced**; **con-vinc-ing** [L *convincere* to refute, convict, prove, fr. *com-* + *vincere* to conquer — more at VICTOR] (1530) 1 obs: a: to overcome by argument b: OVERPOWER, OVERCOME 2 obs: DEMONSTRATE, PROVE 3: to bring (as by argument) to belief, consent, or a course of action: PERSUADE (convinced himself that she was all right — William Faulkner) (something I could never ~ him to read — John Lahr) — **con-vinc-er** n

**con-vinc-ing** \kən-vin(t)-sɪŋ/ adj (1624) 1: satisfying or assuring by argument or proof (a ~ test of a new product) 2: having power to convince of the truth, rightness, or reality of something: PLAUSIBLE (told a ~ story) *syn* see VALID — **con-vinc-ing-ly** \-sɪŋ-lē/ adv

**con-vinc-ing-ness** n

**con-viv-ial** \kən-viv-yəl, -vi-vē-əl/ adj [LL *convivialis*, fr. L *convivium* banquet, fr. *com-* + *vivere* to live — more at QUICK] (ca. 1668): relating to, occupied with, or fond of feasting, drinking, and good company — **con-viv-ial-ity** \-vī-vē-ə-lē-tē/ n — **con-viv-ial-ly** \-vī-vē-ə-lē/ adv

**con-vo-ca-tion** \kən-və-kā-shən/ n [ME, fr. MF, fr. L *convocation*, *convocatio*, fr. *convocare*] (14c) 1 a: an assembly of persons convoked b (1): an assembly of bishops and representative clergy of the Church of England (2): a consultative assembly of clergy and lay delegates from one part of an Episcopal diocese; also: a territorial division of an Episcopal diocese 2: a ceremonial assembly of members of a college or university 3: the act or process of convoking — **con-vok-er** \kən-vək-/ n

**con-vok-ing** \kən-vək-/ vi **con-voked**; **con-vok-ing** [MF *convocare*, fr. L *convocare*, fr. *com-* + *vocare* to call, fr. *voc-*, *vox* voice — more at VOICE] (1598): to call together to a meeting *syn* see SUMMON

**con-vo-lute** \kən-və-lūt/ vb -luted; -lut-ing [L *convolutus*, pp. of *convolvere*] (1698): TWIST, COIL

**con-vo-lut-ed** \-lūt-əd/ adj (1766) 1: having convolutions. 2: INVOLVED, INTRICATE

**convoluted tubule** n (1923): all or part of the coiled sections of a nephron: a: PROXIMAL CONVOLUTED TUBULE b: DISTAL CONVOLUTED TUBULE

**con-vo-lu-tion** \kən-və-lū-shən/ n (1545) 1: a form or shape that is folded in curved or tortuous windings 2: one of the irregular ridges on the surface of the brain and esp. of the cerebrum of higher mammals 3: a complication or intricacy of form, design, or structure

**con-volve** \kən-volv/, -vōlv also -vāv or -vōv/ vb **con-volved**; **con-volv-ing** [L *convolvere*, fr. *com-* + *volvere* to roll — more at VOLUBLE] (1650): to roll together: WRITHE ~ vi: to roll together or circle late involutely

**con-vol-vu-lus** \kən-vāl-vy-əs, -vōl- also -vāv-yə- or -vōv-yə-/ n, pl -lus-es or -li \-lē/ [NL, fr. L *convolvere*] (1548): any of a genus of morning-glory family

**con-voy** \kən-vōy, kən-vey/ vi [ME, fr. MF *conveier*, *conveier* — more at CONVEY] (14c): ACCOMPANY; esp: to escort for protection

**con-voy** \kən-vōy/ n (1523) 1: one that conveys; esp: a protective escort (as for ships) 2: the act of conveying 3: a group conveyed or organized for convenience or protection in moving

**con-vul-sant** \kən-vul-sənt/ adj (1875): causing convulsions: CONVULSIVE

**con-vul-sive** \kən-vul-siv/ adj (1615) 1 a: constituting or producing a convulsion b: attended or affected with convulsions 2: resembling a convulsion in being violent, sudden, frantic, or spasmodic

**con-vul-sive-ly** adv — **con-vul-sive-ness** n

**con-vul-sion** \kən-vul-shən/ n (1547) 1: an abnormal violent and involuntary contraction or series of contractions of the muscles 2: a violent disturbance b: an uncontrolled fit: PAROXYSM — **con-vul-sion-ary** \-shə-nər-ē/ adj

**con-vul-sive** \kən-vul-siv/ adj (1615) 1 a: constituting or producing a convulsion b: attended or affected with convulsions 2: resembling a convulsion in being violent, sudden, frantic, or spasmodic

**con-vul-sive-ly** adv — **con-vul-sive-ness** n

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**con-vul-sive-ly** adv — **con-vul-sive-ness** n

also: ALL RIGHT b: FASHION

ly also coolly \kū(l)-lē/ adv

**LYANT** mean free from agiti-

ness, deliberateness, or dis-

posed implies freedom from

sedate disposition (the con-

collected implies a concei-

trances esp. in moments of cri-

unruffled suggests appare-

backs or in the midst of ex-

turbable implies coolness of

(the speaker remained impe-

lant stresses an easy coolne-

indifference or unconcern (a

cool vi (bef. 12c) 1: to be

the pie in the window to ~)

to lose ardor or passion (h

to impart a feeling of coolne-

used with off or down (a swin

the heat, excitement, or force

to slow or lessen the growi-

down (wants to ~ off the go-

cool it: to calm down: go

cool it — W. M. Young) — co

ing for a long time esp. from c

cool n (15c) 1: a cool time,

2 a: absence of excitement

(must surrender his fine ~ an

— Willfrid Sheed) b: POISE, c

rattle him and he lost his ~

cool adv (1951): in a casual a

coolant \kū-lənt/ n (1926):

cool-down \kū-l-dān/ n (19

physiological activity to retu

exercise by engaging in less st

cooler \kū-lər/ n (1575) 1

cooling liquids b: REFRIGE-

violent or unmanageable pri-

alcoholic beverage as a base

Cooler's anemia \kū-lē-ā-/

anemia (ca. 1935): a severe th

the presence of microcytes, i

crease in the erythroid bone m

in children of Mediterranean r

cool-head-ed \kū-l-he-dəd/ a

coolie \kū-lē/ n (Hindi *kūli*, *ku*

usu. in or from the Far East hi

coolie hat n (1924): a con

protect the head from the heat

cooling-off \kū-lip-ōf/ adj

cool or to permit negotiation

cooling tower n (1901): a

trickled to reduce its temperat

coombe or coomb \kūm/ var

coon \kūn/ n (1742) 1: RA

offensive

coon-can \kūn-kən/ n [by f

quian, fr. Sp *con quien?* wi

played with two packs includi

coon cat n (1901): MAINE COO

coon cheese \kūn-ē/ n (prob. f

coating) (1953): a sharp ched

than usual temperature and

black wax

coon-hound \kūn-haund/ n

raccoons; esp: BLACK-AND-TAN

coon's age n (1844): a long

coon's age — Sinclair Lewis)

coon-skin \kūn-skin/ n (181

an article (as a cap or coat) n

coon-tie \kūn-tē/ n [Creek f

eral tropical American word

for those roots and stems yie

rowroot

coop \kūp, kūp/ n [ME *coop*

age or small enclosure (as f

housing poultry 2 a: a con

coop vi (1583) 1: to confine

usu. used with up 2: to pla

with up

co-op \kō-āp, kō-ā/ n (1869):

co-op-er \kū-pər, kū-ā/ n [M

co-op) or MLC *Kūper*, fr. *kūpe*

akin to Gk *hypodolion* cup — n

repairs wooden casks or tubs

cooper vb coo-pered; coo-p-

work as a cooper on ~ vi: to

coo-per-age \kū-p-ā-jē, kū-ā-

acts 2 a: a cooper's place of bu

coo-per-ate \kō-ā-p-ā-rāt/ vi

to ~ operati to work — more at

another or others: act togeth

ers for mutual benefit — co-op

coo-per-a-tion \kū-p-ā-p-ā-rā-

ating: common effort 2: as

coo-per-a-tion-list \-sh(ə)-

coo-per-a-tive \kō-ā-p-ā-r-

marked by cooperation (~e

ability to work with others (~

ized as a cooperative 3: i

combined liberal arts and tech

coo-per-a-tive-ly adv — co-op-

**inference • inflation**

**in-fer-ence** \in-(fə-)rən(t)s-, -fərn(t)s/ *n* (1594) 1: the act or process of inferring: as a: the act of passing from one proposition; statement, or judgment considered as true to another whose truth is believed to follow from that of the former b: the act of passing from statistical sample data to generalizations (as of the value of population parameters) usu. with calculated degrees of certainty 2: something that is inferred; esp: a proposition arrived at by inference 3: the premises and conclusion of a process of inferring.  
**in-fer-en-tial** \in-(fə-)rən(t)-shəl/ *adj* [ML *inferential*, fr. L *inferens*, *ppr. of inferre*] (1657) 1: relating to, involving, or resembling inference 2: deduced or deducible by inference  
**in-fer-en-tial-ly** \-(fə-)rən(t)-sh(ə)-lē/ *adv* (1691) : by way of inference

**in-fer-en-tial** \in-fə-'ren(t)-shəl\ *adj* [ML *inferential*, fr. L *inferens*, *prp.* of *inferre*] (1657) 1: relating to, involving, or resembling inference 2: deduced or deducible by inference  
**in-fer-en-tial-ly** \-ren(t)-sh(ə)-lē\ *adv* (1691): by way of inference

**inferior conjunction** *n* (1833) : a conjunction of an inferior planet with the sun in which the planet is aligned between the earth and the sun

**infernal** (in-'fər-nl) *adj* [ME, fr. MF, fr. LL *infernalis*, fr. *infernus* hell, fr. L lower, fr. *inferus*] (14c) 1: of or relating to a nether world  
2: of or relating to hell b: HELLISH, DIABOLICAL

**infer-no** (in-far-)(nō) *n. pl.* **-nos** [it, hell, fr. LL *infernus* 'under, below']  
place or a state that resembles or suggests hell (the ~ of war); a  
~ intense heat (the roaring ~ of the blast furnace)  
**infer-tile** ((in-far-tē) *adj.* (MF, fr. LL *infertilis*, fr. L *in-* + *fertis*)  
not fertile or productive (of eggs) (~ fields) — **in-fertile-ly** *adv.*

**in-fidel** /in-'fī-dəl/, -'fī-dəl/ *n* [ME *infidèle*, fr. MF, fr. LL *infidelis* believing, fr. L *unfaithful*, fr. *in-* + *fidelis* faithful — more at FIDEL] the one who is not a Christian or who opposes Christianity

**in-field** *in-feld* *n* (1606). 1: a field near a farmhouse 2: a  
area of a baseball field enclosed by the three bases and home plate  
comprising first base, second base, short

**infield** *n* (1912): a base hit on a ball that does not leave the infield  
**infield out** *n* (1926): a ground ball on which the batter is put out  
**an infielder**  
**in-flight-ing** (*in-fla-tiŋ*) *n* (1816) 1: fighting or boxing at close range 2: a struggle, a struggle 3: prolonged and often

**in-fil-trate** (in-fil-trát, in-) *vb* -trated; -trating *v* (1758)  
cause (as a liquid) to permeate something by penetrating its pores  
cause (as an idea) to permeate (something) by penetration; filter

*n* — *in-fil-tra-tion* \in-'fil-trā-shən\ *n* — *in-fil-tra-tive* \in-'fil-trā-tiv\ *adj* — *in-fil-tra-tor* \in-'fil-trā-tōr, -'in-(ə)-tōr\ *n* — *in-fil-trate* \in-'fil-trāt\ *v* — *in-fil-trite* \in-'fil-itrīt\ *adj* [ME *infinitr*, fr. MF or L; MF, fr. L *infinitus*] 1. extending indefinitely 2. ENDLESS

than any preassigned finite value. *n* — *in-fi-nite-ly* *adv* — *in-fi-nite-ness* *n*  
 numbers) *b*: extending to infinity (~ plane, surface) *c*: charac-  
 terized by an infinite number of elements or terms (an ~ set) (an ~  
 ries) — *in-fi-nite-ly* *adv* — *in-fi-nite-ness* *n*  
 infinite *n* (1535): something that is infinite (as in extent, duration)

**infinitesimal** *adj* (1710) 1: taking on values greater than zero 2: immeasurably or incalculably small — **in-finite-si-mal-ly** \-mə-lē/ *adv*  
**infinitesimal calculus** *n* (1801): CALCULUS 1b  
**infinitival** \-fin-ē-ʔi-vəl/ *adj* (1869): relating to the infinitive

the same time displays some characteristics with to (as in "I asked him to go") except with auxiliary and other verbs (as in "no one saw him leave").

- $\infty$ : the limit of the value of a function or variable which becomes numerically larger than any preassigned finite number; b) the part of a geometric magnitude that lies beyond any part whose distance from a given reference position is finite (do parallel lines ever meet?) c) a transfinite number (as aleph-null).

**in-fir-ma-ry** (in-farm-rē, -fər-mə-) *n. pl.* -ries (15c): a place where  
infirm or sick are lodged for care and treatment

**in-** (in-) *in-* (1502) 1: to fasten or fix by *infix*  
fasten (2: to impress firmly in the consciousness or disposition  
insert (as a sound or letter) as an infix *syn* see *IMPLANT*  
ation *in-(-)fik-sa-shən* *n*  
- (1821) *a* derivational or inflectional affix

**in-fla-gran-te delicto** \in-flə-grən-tē-di-'lik-(ə)lō, -grən-'Vdō  
: FLAGRANTE DELICTO  
**in-flame** \in-'flām/ *vb* **in-flamed**; **in-flam-ing** [ME: *enflamen*,  
from *in-* + *flamma* flame] *vt* (14c):

**in-flam-ma-ble** (in-'fla-mə-bəl) *adj* [F, fr. ML *inflammabile* 'inflammare' (1605) 1: **INFLAMMABLE** 2: easily inflamed, excited] *in-flam-ma-bil-i-ty* \-flə-mə-'bi-l-i-ti/

**in-flam-ma-to-ry** \in-'fla-mə,-tōr-ē,-tōr-iŋ/ *adj* (ca. 1711) 1: acting to bring about inflammation 2: tending to inflame

**in-flate** \in-'flat\ *vb* **in-** *in-*; **flat-** *in-flat-ed; in-flat-ing* [ME; fr. *inflare*, *to blow*, fr. *in-* + *flare* *to blow* — **more at BLOW**] **1** (15c); **2** *to expand*; **3** *to expand*; **4** *to expand*; **5** *to expand*; **6** *to expand*; **7** *to expand*; **8** *to expand*; **9** *to expand*; **10** *to expand*; **11** *to expand*; **12** *to expand*; **13** *to expand*; **14** *to expand*; **15** *to expand*; **16** *to expand*; **17** *to expand*; **18** *to expand*; **19** *to expand*; **20** *to expand*; **21** *to expand*; **22** *to expand*; **23** *to expand*; **24** *to expand*; **25** *to expand*; **26** *to expand*; **27** *to expand*; **28** *to expand*; **29** *to expand*; **30** *to expand*; **31** *to expand*; **32** *to expand*; **33** *to expand*; **34** *to expand*; **35** *to expand*; **36** *to expand*; **37** *to expand*; **38** *to expand*; **39** *to expand*; **40** *to expand*; **41** *to expand*; **42** *to expand*; **43** *to expand*; 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**94** *to expand*; **95** *to expand*; **96** *to expand*; **97** *to expand*; **98** *to expand*; **99** *to expand*; **100** *to expand*; **101** *to expand*; **102** *to expand*; **103** *to expand*; **104** *to expand*; **105** *to expand*; **106** *to expand*; **107** *to expand*; **108** *to expand*; **109** *to expand*; **110** *to expand*; **111** *to expand*; **112** *to expand*; **113** *to expand*; **114** *to expand*; **115** *to expand*; **116** *to expand*; **117** *to expand*; **118** *to expand*; **119** *to expand*; **120** *to expand*; **121** *to expand*; **122** *to expand*; **123** *to expand*; **124** *to expand*; **125** *to expand*; **126** *to expand*; **127** *to expand*; **128** *to expand*; **129** *to expand*; **130** *to expand*; **131** *to expand*; **132** *to expand*; **133** *to expand*; **134** *to expand*; **135** *to expand*; **136** *to expand*; **137** *to expand*; **138** *to expand*; **139** *to expand*; **140** *to expand*; **141** *to expand*; 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**238** *to expand*; **239** *to expand*; **240** *to expand*; **241** *to expand*

**EXPAND** — in-flat-or or in-flat-er \-flā-tēr/  
Inflated *adj* (1652) : 1: elaborated or heightened by artificial means (an ~ style of writing) 2: distended with air or gas  
**PANDE** — pan-dē \-pan-dee/  
Pandered to an abnormal or unjustifiable volume or level (~ politics being hollow and enlarged or distended)

inflation (in-fla-shən) *n* (14c) 1: an act of inflating  
2: being inflated: as a : DISTENSION; b : a hypothetical extreme  
3: being hollow and enlarged

**inflationary spiral** *n* (1931): a continued by the tendency of wage increases

**flexible** \-'flek-tə-bəl/ *adj* — **in-flex-**  
**ion** \in-'flek-shən/ *n* (1531) 1

**inflection-al** \-shnəl, -shə-nəl/ *adj* (1) characterized by inflection (an ~ suffix) — *fr.* **inflection point** *n* (ca. 1721): a point

not readily bent: lacking or deficient change: UNALTERABLE — in-flex-i-bil  
flex-i-ble-ness \-'flek-sə-bəl-nəs\ n —  
syn INFLEXIBLE, OBDUROATE, ADAMANT

**inflect** \in-'flikt\ vt [L *inflectus*, pp. of

thing (as punishment or suffering) tha  
in-flight \in-'flit, (,)in-\ adj (1944) :  
use or enjoyment while in flight (~ m  
in-flor-es-cence \in-fla-'re-s'n(t)s\ n!

**inflorescens**, prp. of *inflorescere* to begin to bloom — more as to the mode of development and arrangement of the floral axis with its appendages; all of reproductive organs on a moss us

...reproductive organs on a moss us  
budding and unfolding of blossoms :



inflorescence 1a(1): 1 raceme, 2 c  
mbel, 5 capitulum, 6 spike, 7 com

flow \fin-,flō\ n (1839): a flowing  
presence \fin-,flü-ən(t)s; exp Soul.  
sentia, fr. L *influent-*, *influens*, p.  
to flow — more at FLUID] (14

of occult power held to derive  
or moral force 3 a: the  
apparent exertion of force  
interference with authority

capacity of causing an effect in in  
that exerts influence — under  
DRUNK (was arrested for drivin  
INFLUENCE. AUTHORITY, PREST

...over the minds or behavior  
...exercised and received cons  
...fluence to get the bill passed): Al  
...devotion or allegiance or of co  
...lacked authority). **AGREED**

...authority). PRESTIGE implies excellence or reputation (a newspaper). WEIGHT implies determining acts or choices (the weight). CREDIT suggests influence (his credit).

credit with the press).